

REMARKS

The Office Action mailed on May 27, 2009, has been received and its contents carefully considered. Favorable reconsideration and allowance of the present patent application are respectfully requested in view of the following remarks. Upon entry of the present Reply, Claims 1-30 are pending in the present application. Claims 1-27 stand rejected. Claims 1-4, 6-8, 10, 11, 14-17, 21 and 22 have been amended by way of the present response. Claims 28-30 are newly added, support for which can be found in paragraphs [0008] – [0010] of the specification and Figure 1. Applicant submits that upon entry of the present Reply, Claims 1-30 are in condition for allowance. Moreover, Applicant submits that no new matter has been introduced by the foregoing amendments.

Examiner Interview

An in-person Examiner Interview was conducted on August 13, 2009, during which independent Claim 1 was discussed in light of the rejections of record. The Examiner indicated that the proposed claim amendments Claim 1 overcome the rejections of record. The amendments found herein are different than the amendments discussed in the Examiner Interview. No agreement regarding patentability was reached since an updated search will be required.

Rejections under 35 U.S.C. §§102 and 103

In the outstanding Action, Claims 1-3 and 5 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U. S. Patent No. 5,489,753 to Gibel.

Claims 4, 8 and 14-27 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Gibel in view of U. S. Patent Publication No. 2002/0175022 to Schumacher et al., now US Patent No. 7,040,451 (hereinafter referred to as “Schumacher”). Claim 6 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Gibel in view of U.S. Patent No. 3,977,381 to Fujikawa et al. (hereinafter referred to as “Fujikawa”). Claims 7 and 9-13 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Gibel in view of Schumacher as applied to Claim 4, and further in view of Fujikawa.

Applicant respectfully traverses each of these rejections for at least the following reasons.

Independent Claim 1 is the sole independent claim presently under consideration. None of the cited references, considered alone or in combination, teach or suggest every element recited in independent Claim 1.

Rejections under 35 U.S.C. §102

The rejection of Claims 1-3 and 5 under 35 U.S.C. § 102(b) as allegedly being anticipated by Gibel is respectfully traversed.

Amended Claim 1 recites:

A muffler comprising:
a casing comprising gas inlet chamber communicating with a gas inlet and a gas outlet chamber communicating with a gas outlet;
a pressure sensor member; and
a throttling device is located between the inlet and outlet of the muffler and controlled by pressure of the gas flow, wherein a cross sectional area of the gas flow of the throttling device reduces when pressure of the gas flow increases.

Gibel does not describe or suggest every element recited in Claim 1. Rather, in contrast to the present invention, Gibel describes an auto-adjusting damper assembly (60) for a muffler (10). The muffler (10) includes a porous housing (11) that defines a chamber (34) therein. A first end cover (20) and a second end cover (40) are coupled to the porous housing (11) and include an inlet passageway (26) and an outlet passageway (42), respectively. The damper assembly (60) is coupled within the muffler (10) and includes a damper plate (61) that is coupled to reaction springs (70), extending rods (50) and a screw (81). The plate (61) is positioned within the chamber (34) such that a space is defined between the plate (61) and the porous housing (11).

During operation, air flow enters the chamber (24) through inlet passageway (26) and impinges on the plate (61). A strong burst of air flow may cause the plate (61) to move downwards against the pressure of the reaction springs (70). Air flow may pass between the plate (61) and the housing and the second end cover (40). Moreover, the air flow may be channeled through the porous housing (11).

As stated on Page 3 of the Office Action, Gibel fails to teach an energy or pressure sensor member. Moreover, Gibel is silent regarding “a pressure sensor member; and a throttling device is located between the inlet and outlet of the muffler and controlled by pressure of the gas flow, wherein a cross sectional area of the gas flow of the throttling device reduces when pressure of the gas flow increases”, as recited in Claim 1. As a result, Gibel does not describe or suggest every element recited in Claim 1.

For at least the reasons set forth above, Applicant respectfully submits that independent Claim 1 is patentable over Gibel. Since dependent Claims 2, 3 and 5 depend, directly or indirectly, from independent Claim 1, Applicant respectfully submits that Claims 2, 3 and 5

likewise are patentable over Gibel. Accordingly, Applicant respectfully requests that the 102 rejection of Claims 1-3 and 5 be withdrawn.

Rejections under 35 U.S.C. §103

The rejection of Claims 4, 8 and 14-27 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Gibel in view of Schumacher, is respectfully traversed. Moreover, the rejection of Claim 6 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Gibel in view of Fujikawa, is respectfully traversed. The rejection of Claims 7 and 9-13 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Gibel in view Schumacher as applied to Claim 4, and further in view of Fujikawa, is also respectfully traversed.

Claims 4 and 6-27 depend, directly or indirectly, from independent Claim 1. As discussed above, Gibel does not teach or suggest every element recited in Claim 1. Neither, Schumacher nor Fujikawa, considered alone or in combination, resolve the deficiencies of Gibel. As a result, none of Gibel, Schumacher and Fujikawa, considered alone or in combination, teach or suggest every element recited in Claim 1.

As discussed above, Gibel is silent regarding “a pressure sensor member; and a throttling device is located between the inlet and outlet of the muffler and controlled by pressure of the gas flow, wherein a cross sectional area of the gas flow of the throttling device reduces when pressure of the gas flow increases”, as recited in Claim 1. Neither Schumacher nor Fujikawa resolve this silence. Rather, in contrast to the present invention, Schumacher describes an actuator (4) coupled to the outside of a flow branch (5) for use with mufflers (2 and 3). The flow branch (5) includes an inlet (6) and dual outlets (7 and 8), which are connected to the mufflers (2 and 3). The flow branch (5) also includes a closure member (14) coupled to a valve plunger (13). The actuator (4) is an external device that includes a housing (16), which includes a diaphragm

(19) and a spring (12) coupled therein. The valve plunger (13) extends away from the closure member (14) and extends out of the flow branch (5) device into the actuator (4) such that the valve plunger (13) is coupled to the diaphragm (19). Notable, the diaphragm (19) is not a pressure sensor member, as described in the present invention.

As a result, neither Gibel nor Schumacher, considered alone or in combination, teach or suggest “a pressure sensor member; and a throttling device is located between the inlet and outlet of the muffler and controlled by pressure of the gas flow, wherein a cross sectional area of the gas flow of the throttling device reduces when pressure of the gas flow increases”, as recited in Claim 1.

Turning to the third reference, Fujikawa describes an exhaust gas recirculation system that includes a recirculation passageway (18) that is coupled in flow communication to an exhaust gas passageway (17) and an intake manifold (16) using control valves (20 and 22). The control valves (20 and 22) include apertures (30 and 31), respectively. A pair of servo motors (24 and 26) are coupled to the outside of the control valves (20 and 22). A pair of valve members (32 and 34) are positioned within apertures (30 and 31) and include valve stems (40 and 42) that extend away from the valve members (32 and 34), respectively. Moreover, the valve stems (40 and 42) extend out of the recirculation passageway (18) and into the servo motors (24 and 26). The valve stems (40 and 42) are coupled to diaphragms (48 and 50), which are coupled within the external servo motors (24 and 26). Notably, the diaphragms (48 and 50) are not pressure sensor members as described in the present invention.

As a result, none of Gibel, Schumacher and Fujikawa, considered alone or in combination, teach or suggest “a pressure sensor member; and a throttling device is located between the inlet and outlet of the muffler and controlled by pressure of the gas flow, wherein a

cross sectional area of the gas flow of the throttling device reduces when pressure of the gas flow increases”, as recited in Claim 1. As a result, none of Gibel, Schumacher and Fujikawa, considered alone or in combination, teach or suggest every element recited in Claim 1.

For at least the reasons set forth above, Applicant respectfully submits that independent Claim 1 is patentable over Gibel in view of Schumacher and in further view of Fujikawa. Since dependent Claims 4 and 6-27 incorporate all the elements of independent Claim 1, Applicant respectfully submits that Claims 4 and 6-27 likewise are patentable over Gibel in view of Schumacher and in further view of Fujikawa.

CONCLUSION

Applicants have made a diligent effort to place the application in condition for allowance. However, should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone Timothy J. Maier, Applicants' attorney at 1.703.740.8322 so that such issues may be resolved as expeditiously as possible.

Respectfully Submitted,
MAIER & MAIER, PLLC

/Timothy J. Maier/
Timothy J. Maier
Reg. No. 51,986

Maier & Maier, PLLC
1000 Duke Street
Alexandria, VA 22314
(703) 740-8322

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